

OIPE

RAW SEQUENCE LISTING

DATE: 09/19/2001

PATENT APPLICATION: US/09/866,866A

TIME: 10:07:09

Input Set : A:\1340-21CIP2.ST25.txt

Output Set: N:\CRF3\09192001\I866866A.raw

3 <110> APPLICANT: Sorrentino, Brian
 4 Schuetz, John
 6 <120> TITLE OF INVENTION: A Method of Identifying and/or Isolating Stem Cells
 8 <130> FILE REFERENCE: 1340-1-021CIP2
 10 <140> CURRENT APPLICATION NUMBER: 09/866,866A
 C--> 11 <141> CURRENT FILING DATE: 2001-08-30
 13 <150> PRIOR APPLICATION NUMBER: 09/584,586
 14 <151> PRIOR FILING DATE: 2000-05-31
 16 <150> PRIOR APPLICATION NUMBER: PCT/US99/11825
 17 <151> PRIOR FILING DATE: 1999-05-27
 18 <150> PRIOR APPLICATION NUMBER: 60/086,988
 19 <151> PRIOR FILING DATE: 1998-05-28
 22 <160> NUMBER OF SEQ ID NOS: 27
 24 <170> SOFTWARE: PatentIn version 3.0
 26 <210> SEQ ID NO: 1
 27 <211> LENGTH: 3860
 28 <212> TYPE: DNA
 29 <213> ORGANISM: Homo sapiens
 31 <400> SEQUENCE: 1

32	atggatcttg	aaggggaccg	caatggagga	gcaaagaaga	agaacttttt	taaactgaac	60
34	aataaaaagt	aaaaagataa	gaaggaaaag	aaaccaactg	tcagtgtatt	ttcaatgttt	120
36	cgctattcaa	attggcttga	caagttgtat	atggtggtgg	gaactttggc	tgccatcatc	180
38	catggggctg	gacttcctct	catgatgctg	gtgtttggag	aaatgacaga	tatctttgca	240
40	aatgcaggaa	atttagaaga	tctgatgtca	aacatcacta	atagaagtga	tatcaatgat	300
42	acagggttct	tcatgaatct	ggaggaagac	atgaccagat	atgcctatta	ttacagtgga	360
44	attggtgctg	gggtgctggt	tgctgcttac	attcagggtt	cattttgggtg	cctggcagct	420
46	ggaagacaaa	tacacaaaat	tagaaaacag	ttttttcatg	ctataatgcg	acaggagata	480
48	ggctggtttg	atgtgcacga	tgttggggag	cttaacaccc	gacttacaga	tgatgtctct	540
50	aagattaatg	aaggatttgg	tgacaaaatt	ggaatgttct	ttcagtcaat	ggcaacattt	600
52	ttcactgggt	ttatagtagg	atttacacgt	ggttggaagc	taacccttgt	gattttggcc	660
54	atcagtcctg	ttcttggact	gtcagctgct	gtctgggcaa	agatactatc	ttcatttact	720
56	gataaagaac	tcttagcgta	tgcaaaaagc	ggagcagtag	ctgaagaggt	cttggcagca	780
58	attagaactg	tgattgcatt	tggaggacaa	aagaaagaac	ttgaaaggta	caacaaaaat	840
60	ttagaagaag	ctaaaagaat	tgggataaag	aaagctatta	cagccaatat	ttctataggt	900
62	gctgctttcc	tgctgatcta	tgcatcttat	gctctggcct	tctggtatgg	gaccaccttg	960
64	gtcctctcag	gggaatattc	tattggacaa	gtactcactg	tattcttttc	tgtattaatt	1020
66	ggggctttta	gtgttggaca	ggcatctcca	agcattgaag	catttgcaaa	tgcaagagga	1080
68	gcagcttatg	aaatcttcaa	gataattgat	aataagccaa	gtattgacag	ctattcgaag	1140
70	agtgggcaca	aaccagataa	tattaaggga	aatttggaat	tcagaaatgt	tactttcagt	1200
72	tacccatctc	gaaaagaagt	taagatcttg	aagggcctga	acctgaaggt	gcagagtggg	1260
74	cagacggtgg	ccctgggttg	aaacagtggc	tgtgggaaga	gcacaacagt	ccagctgatg	1320
76	cagaggctct	atgacccccc	agaggggatg	gtcagtgttg	atggacagga	tattaggacc	1380
78	ataaatgtaa	ggtttctacg	ggaaatcatt	ggtgtggtga	gtcaggaacc	tgtattgttt	1440
80	gccaccacga	tagctgaaaa	cattcgctat	ggccgtgaaa	atgtcaccat	ggatgagatt	1500
82	gagaaagctg	tcaagggaagc	caatgcctat	gactttatca	tgaaactgcc	tcataaattt	1560
84	gacaccctgg	ttggagagag	agggggcccag	ttgagtgggtg	ggcagaagca	gaggatcgcc	1620
86	attgcacgtg	ccctggttcg	caaccccaag	atcctcctgc	tggtatgaggc	cacgtcagcc	1680

ENTERED

RAW SEQUENCE LISTING

DATE: 09/19/2001

PATENT APPLICATION: US/09/866,866A

TIME: 10:07:09

Input Set : A:\1340-21CIP2.ST25.txt

Output Set: N:\CRF3\09192001\I866866A.raw

```

88 ttggacacag aaagcgaagc agtgggttcag gtggctcttg ataaggccag aaaaggctcg 1740
90 accaccattg tgatagctca tcgtttgtct acagttcgta atgctgacgt catcgctgg 1800
92 ttcgatgatg gagtcattgt ggagaaaagga aatcatgatg aactcatgaa agagaaaagg 1860
94 atttacttca aacttgtcac aatgcagaca gcaggaaatg aagttgaatt agaaaatgca 1920
96 gctgatgaat ccaaaaagtga aattgatgcc ttggaaatgt cttcaaatga ttcaagatcc 1980
98 agtctaataa gaaaaagatc aactcgtagg agtgctccgtg gatcacaaagc ccaagacaga 2040
100 aagcttagta ccaaagaggc tctggatgaa agtataacctc cagtttctctt ttggaggatt 2100
102 atgaagctaa atttaactga atggccttat tttgttggtg gtgtattttg tgccattata 2160
104 aatggaggcc tgcaaccagc atttgcaata atattttcaa agattatagg ggtttttaca 2220
106 agaattgatg atcctgaaac aaaacgacag aatagtaact tgttttcact attgtttcta 2280
108 gcccttggaa ttatttcttt tattacattt ttccctcaag gtttcacatt tggcaaagct 2340
110 ggagagatcc tcaccaagcg gctccgatac atgggttttcc gatccatgct cagacaggat 2400
112 ttgatgttgt ttgatgacct taaaaacacc actggagcat tgactaccag gctcgccaat 2460
114 gatgctgctc aagttaaagg ggctataggt tccaggcttg ctgtaattac ccagaatata 2520
116 gcaaactctt ggacaggaat aattatatcc ttcactatg gttggcaact aacactgtta 2580
118 ctcttagcaa ttgtacccat cattgcaata gcaggagttg ttgaaatgaa aatgttgtct 2640
120 ggacaagcac tgaaagataa gaaagaacta gaagggtgctg ggaagatcgc tactgaagca 2700
122 atagaaaact tccgaaccgt tgtttctttg actcaggagc agaagtttga acatatgtat 2760
124 gctcagagtt tgcaggtacc atacagaaac tctttgagga aagcacacat ctttggaatt 2820
126 acattttcct tcaccagggc aatgatgtat ttttcctatg ctggatgttt ccggtttgga 2880
128 gcctacttgg tggcacataa actcatgagc tttgaggatg ttctgttagt attttcagct 2940
130 gttgtctttg gtgccatggc cgtggggcaa gtcagttcat ttgctcctga ctatgccaaa 3000
132 gccaaaatat cagcagccca catcatcatg atcattgaaa aaaccctttt gattgacagc 3060
134 tacagcacgg aaggcctaata gccgaacaca ttggaaggaa atgtcacatt tggatgaagt 3120
136 gtattcaact atcccacccg accggacatc ccagtgtctc agggactgag cctggagggtg 3180
138 aagaagggcc agacgctggc tctggtgggc agcagtggct gtgggaagag cacagtggct 3240
140 cagctcctgg agcgtttcta cgacccttg gcagggaag tgctgttga tggcaaagaa 3300
142 ataaagcgac tgaatgttca gtggtccga gcacacctg gcacgtgtc ccaggagccc 3360
144 atcctgtttg actgcagcat tgctgagaac attgcctatg gagacaacag ccgggtggtg 3420
146 tcacaggaag agatcgtgag ggcagcaaaag gaggccaaca tacatgcctt catcgagtca 3480
148 ctgcctaata aatatagcac taaagtagga gacaaaggaa ctcatgtctc tgggtggccag 3540
150 aaacaacgca ttgccatagc tcgtgccctt gttagacagc ctcatatttt gcttttgat 3600
152 gaagccacgt cagctctgga tacagaaaag gaaaagggtt tccaagaagc cctggacaaa 3660
154 gccagagaag gccgcacctg cattgtgatt gctcaccgcc tgtccacct ccagaatgca 3720
156 gacttaatag tgggttttca gaatggcaga gtcaaggagc atggcacgca tcagcagctg 3780
158 ctggcacaga aaggcatcta tttttcaatg gtcagtgtcc aggctggaac aaagcgccag 3840
160 tgaactctgg ttaactccac 3860
163 <210> SEQ ID NO: 2
164 <211> LENGTH: 1280
165 <212> TYPE: PRT
166 <213> ORGANISM: Homo sapiens
168 <400> SEQUENCE: 2
170 Met Asp Leu Glu Gly Asp Arg Asn Gly Gly Ala Lys Lys Lys Asn Phe
171 1 5 10 15
173 Phe Lys Leu Asn Asn Lys Ser Glu Lys Asp Lys Lys Glu Lys Lys Pro
174 20 25 30
176 Thr Val Ser Val Phe Ser Met Phe Arg Tyr Ser Asn Trp Leu Asp Lys
177 35 40 45
179 Leu Tyr Met Val Val Gly Thr Leu Ala Ala Ile Ile His Gly Ala Gly

```

RAW SEQUENCE LISTING

DATE: 09/19/2001

PATENT APPLICATION: US/09/866,866A

TIME: 10:07:09

Input Set : A:\1340-21CIP2.ST25.txt

Output Set: N:\CRF3\09192001\I866866A.raw

```

180      50                      55                      60
182 Leu Pro Leu Met Met Leu Val Phe Gly Glu Met Thr Asp Ile Phe Ala
183 65                      70                      75                      80
185 Asn Ala Gly Asn Leu Glu Asp Leu Met Ser Asn Ile Thr Asn Arg Ser
186                      85                      90                      95
188 Asp Ile Asn Asp Thr Gly Phe Phe Met Asn Leu Glu Glu Asp Met Thr
189                      100                    105                    110
191 Arg Tyr Ala Tyr Tyr Tyr Ser Gly Ile Gly Ala Gly Val Leu Val Ala
192                      115                    120                    125
194 Ala Tyr Ile Gln Val Ser Phe Trp Cys Leu Ala Ala Gly Arg Gln Ile
195                      130                    135                    140
197 His Lys Ile Arg Lys Gln Phe Phe His Ala Ile Met Arg Gln Glu Ile
198 145                      150                    155                    160
200 Gly Trp Phe Asp Val His Asp Val Gly Glu Leu Asn Thr Arg Leu Thr
201                      165                    170                    175
203 Asp Asp Val Ser Lys Ile Asn Glu Gly Ile Gly Asp Lys Ile Gly Met
204                      180                    185                    190
206 Phe Phe Gln Ser Met Ala Thr Phe Phe Thr Gly Phe Ile Val Gly Phe
207                      195                    200                    205
209 Thr Arg Gly Trp Lys Leu Thr Leu Val Ile Leu Ala Ile Ser Pro Val
210                      210                    215                    220
212 Leu Gly Leu Ser Ala Ala Val Trp Ala Lys Ile Leu Ser Ser Phe Thr
213 225                      230                    235                    240
215 Asp Lys Glu Leu Leu Ala Tyr Ala Lys Ala Gly Ala Val Ala Glu Glu
216                      245                    250                    255
218 Val Leu Ala Ala Ile Arg Thr Val Ile Ala Phe Gly Gly Gln Lys Lys
219                      260                    265                    270
221 Glu Leu Glu Arg Tyr Asn Lys Asn Leu Glu Glu Ala Lys Arg Ile Gly
222                      275                    280                    285
224 Ile Lys Lys Ala Ile Thr Ala Asn Ile Ser Ile Gly Ala Ala Phe Leu
225                      290                    295                    300
227 Leu Ile Tyr Ala Ser Tyr Ala Leu Ala Phe Trp Tyr Gly Thr Thr Leu
228 305                      310                    315                    320
230 Val Leu Ser Gly Glu Tyr Ser Ile Gly Gln Val Leu Thr Val Phe Phe
231                      325                    330                    335
233 Ser Val Leu Ile Gly Ala Phe Ser Val Gly Gln Ala Ser Pro Ser Ile
234                      340                    345                    350
236 Glu Ala Phe Ala Asn Ala Arg Gly Ala Ala Tyr Glu Ile Phe Lys Ile
237                      355                    360                    365
239 Ile Asp Asn Lys Pro Ser Ile Asp Ser Tyr Ser Lys Ser Gly His Lys
240                      370                    375                    380
242 Pro Asp Asn Ile Lys Gly Asn Leu Glu Phe Arg Asn Val His Phe Ser
243 385                      390                    395                    400
245 Tyr Pro Ser Arg Lys Glu Val Lys Ile Leu Lys Gly Leu Asn Leu Lys
246                      405                    410                    415
248 Val Gln Ser Gly Gln Thr Val Ala Leu Val Gly Asn Ser Gly Cys Gly
249                      420                    425                    430
251 Lys Ser Thr Thr Val Gln Leu Met Gln Arg Leu Tyr Asp Pro Thr Glu
252                      435                    440                    445

```

RAW SEQUENCE LISTING

DATE: 09/19/2001

PATENT APPLICATION: US/09/866,866A

TIME: 10:07:09

Input Set : A:\1340-21CIP2.ST25.txt

Output Set: N:\CRF3\09192001\I866866A.raw

```

254 Gly Met Val Ser Val Asp Gly Gln Asp Ile Arg Thr Ile Asn Val Arg
255      450      455      460
257 Phe Leu Arg Glu Ile Ile Gly Val Val Ser Gln Glu Pro Val Leu Phe
258 465      470      475      480
260 Ala Thr Thr Ile Ala Glu Asn Ile Arg Tyr Gly Arg Glu Asn Val Thr
261      485      490      495
263 Met Asp Glu Ile Glu Lys Ala Val Lys Glu Ala Asn Ala Tyr Asp Phe
264      500      505      510
266 Ile Met Lys Leu Pro His Lys Phe Asp Thr Leu Val Gly Glu Arg Gly
267      515      520      525
269 Ala Gln Leu Ser Gly Gly Gln Lys Gln Arg Ile Ala Ile Ala Arg Ala
270      530      535      540
272 Leu Val Arg Asn Pro Lys Ile Leu Leu Leu Asp Glu Ala Thr Ser Ala
273 545      550      555      560
275 Leu Asp Thr Glu Ser Glu Ala Val Val Gln Val Ala Leu Asp Lys Ala
276      565      570      575
278 Arg Lys Gly Arg Thr Thr Ile Val Ile Ala His Arg Leu Ser Thr Val
279      580      585      590
281 Arg Asn Ala Asp Val Ile Ala Gly Phe Asp Asp Gly Val Ile Val Glu
282      595      600      605
284 Lys Gly Asn His Asp Glu Leu Met Lys Glu Lys Gly Ile Tyr Phe Lys
285      610      615      620
287 Leu Val Thr Met Gln Thr Ala Gly Asn Glu Val Glu Leu Glu Asn Ala
288 625      630      635      640
290 Ala Asp Glu Ser Lys Ser Glu Ile Asp Ala Leu Glu Met Ser Ser Asn
291      645      650      655
293 Asp Ser Arg Ser Ser Leu Ile Arg Lys Arg Ser Thr Arg Arg Ser Val
294      660      665      670
296 Arg Gly Ser Gln Ala Gln Asp Arg Lys Leu Ser Thr Lys Glu Ala Leu
297      675      680      685
299 Asp Glu Ser Ile Pro Pro Val Ser Phe Trp Arg Ile Met Lys Leu Asn
300      690      695      700
302 Leu Thr Glu Trp Pro Tyr Phe Val Val Gly Val Phe Cys Ala Ile Ile
303 705      710      715      720
305 Asn Gly Gly Leu Gln Pro Ala Phe Ala Ile Ile Phe Ser Lys Ile Ile
306      725      730      735
308 Gly Val Phe Thr Arg Ile Asp Asp Pro Glu Thr Lys Arg Gln Asn Ser
309      740      745      750
311 Asn Leu Phe Ser Leu Leu Phe Leu Ala Leu Gly Ile Ile Ser Phe Ile
312      755      760      765
314 Thr Phe Phe Leu Gln Gly Phe Thr Phe Gly Lys Ala Gly Glu Ile Leu
315      770      775      780
317 Thr Lys Arg Leu Arg Tyr Met Val Phe Arg Ser Met Leu Arg Gln Asp
318 785      790      795      800
320 Val Ser Trp Phe Asp Asp Pro Lys Asn Thr Thr Gly Ala Leu Thr Thr
321      805      810      815
323 Arg Leu Ala Asn Asp Ala Ala Gln Val Lys Gly Ala Ile Gly Ser Arg
324      820      825      830
326 Leu Ala Val Ile Thr Gln Asn Ile Ala Asn Leu Gly Thr Gly Ile Ile

```

RAW SEQUENCE LISTING

DATE: 09/19/2001

PATENT APPLICATION: US/09/866,866A

TIME: 10:07:09

Input Set : A:\1340-21CIP2.ST25.txt

Output Set: N:\CRF3\09192001\I866866A.raw

```

327      835      840      845
329 Ile Ser Phe Ile Tyr Gly Trp Gln Leu Thr Leu Leu Leu Leu Ala Ile
330      850      855      860
332 Val Pro Ile Ile Ala Ile Ala Gly Val Val Glu Met Lys Met Leu Ser
333 865      870      875      880
335 Gly Gln Ala Leu Lys Asp Lys Lys Glu Leu Glu Gly Ala Gly Lys Ile
336      885      890      895
338 Ala Thr Glu Ala Ile Glu Asn Phe Arg Thr Val Val Ser Leu Thr Gln
339      900      905      910
341 Glu Gln Lys Phe Glu His Met Tyr Ala Gln Ser Leu Gln Val Pro Tyr
342      915      920      925
344 Arg Asn Ser Leu Arg Lys Ala His Ile Phe Gly Ile Thr Phe Ser Phe
345      930      935      940
347 Thr Gln Ala Met Met Tyr Phe Ser Tyr Ala Gly Cys Phe Arg Phe Gly
348 945      950      955      960
350 Ala Tyr Leu Val Ala His Lys Leu Met Ser Phe Glu Asp Val Leu Leu
351      965      970      975
353 Val Phe Ser Ala Val Val Phe Gly Ala Met Ala Val Gly Gln Val Ser
354      980      985      990
356 Ser Phe Ala Pro Asp Tyr Ala Lys Ala Lys Ile Ser Ala Ala His Ile
357      995      1000      1005
359 Ile Met Ile Ile Glu Lys Thr Pro Leu Ile Asp Ser Tyr Ser Thr
360      1010      1015      1020
362 Glu Gly Leu Met Pro Asn Thr Leu Glu Gly Asn Val Thr Phe Gly
363      1025      1030      1035
365 Glu Val Val Phe Asn Tyr Pro Thr Arg Pro Asp Ile Pro Val Leu
366      1040      1045      1050
368 Gln Gly Leu Ser Leu Glu Val Lys Lys Gly Gln Thr Leu Ala Leu
369      1055      1060      1065
371 Val Gly Ser Ser Gly Cys Gly Lys Ser Thr Val Val Gln Leu Leu
372      1070      1075      1080
374 Glu Arg Phe Tyr Asp Pro Leu Ala Gly Lys Val Leu Leu Asp Gly
375      1085      1090      1095
377 Lys Glu Ile Lys Arg Leu Asn Val Gln Trp Leu Arg Ala His Leu
378      1100      1105      1110
380 Gly Ile Val Ser Gln Glu Pro Ile Leu Phe Asp Cys Ser Ile Ala
381      1115      1120      1125
383 Glu Asn Ile Ala Tyr Gly Asp Asn Ser Arg Val Val Ser Gln Glu
384      1130      1135      1140
386 Glu Ile Val Arg Ala Ala Lys Glu Ala Asn Ile His Ala Phe Ile
387      1145      1150      1155
389 Glu Ser Leu Pro Asn Lys Tyr Ser Thr Lys Val Gly Asp Lys Gly
390      1160      1165      1170
392 Thr Gln Leu Ser Gly Gly Gln Lys Gln Arg Ile Ala Ile Ala Arg
393      1175      1180      1185
395 Ala Leu Val Arg Gln Pro His Ile Leu Leu Leu Asp Glu Ala Thr
396      1190      1195      1200
398 Ser Ala Leu Asp Thr Glu Ser Glu Lys Val Val Gln Glu Ala Leu
399      1205      1210      1215

```

VERIFICATION SUMMARY

DATE: 09/19/2001

PATENT APPLICATION: US/09/866,866A

TIME: 10:07:10

Input Set : A:\1340-21CIP2.ST25.txt

Output Set: N:\CRF3\09192001\I866866A.raw

L:11 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:2122 M:220 C: Keyword misspelled or invalid format, <213> ORGANISM for SEQ ID#:15
L:2134 M:220 C: Keyword misspelled or invalid format, <213> ORGANISM for SEQ ID#:16
L:2146 M:220 C: Keyword misspelled or invalid format, <213> ORGANISM for SEQ ID#:17
L:2158 M:220 C: Keyword misspelled or invalid format, <213> ORGANISM for SEQ ID#:18
L:2170 M:220 C: Keyword misspelled or invalid format, <213> ORGANISM for SEQ ID#:19
L:2182 M:220 C: Keyword misspelled or invalid format, <213> ORGANISM for SEQ ID#:20
L:2194 M:220 C: Keyword misspelled or invalid format, <213> ORGANISM for SEQ ID#:21
L:2206 M:220 C: Keyword misspelled or invalid format, <213> ORGANISM for SEQ ID#:22
L:2218 M:220 C: Keyword misspelled or invalid format, <213> ORGANISM for SEQ ID#:23
L:2230 M:220 C: Keyword misspelled or invalid format, <213> ORGANISM for SEQ ID#:24
L:2242 M:220 C: Keyword misspelled or invalid format, <213> ORGANISM for SEQ ID#:25